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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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TOWNSEND AND TOWNSEND AND CREW, LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834			ETTEHADIEH, ASLAN	
			ART UNIT	PAPER NUMBER
			2611	

DATE MAILED: 11/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/809,559

Applicant(s)

JONES ET AL.

Examiner

Aslan Ettehadieh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

1. Claims 1 – 13 provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1 – 13 of copending Application No. 10/643215. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.
2. Claims 1 – 13 directed to the same invention as that of claims 1 – 13 of commonly assigned 10/643215. The issue of priority under 35 U.S.C. 102(g) and possibly 35 U.S.C. 102(f) of this single invention must be resolved.

Since the U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300), the assignee is required to state which entity is the prior inventor of the conflicting subject matter. A terminal disclaimer has no effect in this situation since the basis for refusing more than one patent is priority of invention under 35 U.S.C. 102(f) or (g) and not an extension of monopoly.

Failure to comply with this requirement will result in a holding of abandonment of this application.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the transmitting antenna must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

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3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

4. Claims 1 - 6 are objected to because of the following informalities: please change "11b" to "802.11b".

5. Claim 13 is objected to because of the following informalities: "receiving the upstream data at the client device" to "receiving the upstream data at the access point". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1 – 12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not disclose "logic for routing information between a client and the client wireless module" and "logic for routing information between an access point and the access point wireless module".

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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7. Claims 1, 4 recites the limitation "the access point" in an 11b processing section, for processing at least data to be transmitted to the access point into representations of a transmit signal. There is insufficient antecedent basis for this limitation in the claim. Does applicant mean "a access point" or "the access point wireless module".

8. Similarly, claims 7, 10 recites the limitation "the client " in an 802.11b processing section, for processing at least data to be transmitted to the client into representations of a transmit signal. There is insufficient antecedent basis for this limitation in the claim. Does applicant mean "a client" or "the client wireless module".

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claim 13 is rejected under 35 U.S.C. 102(e) as being anticipated by Keaney et al. (US 7062703).

10. Regarding claim 13, Keaney discloses a method of wireless communication between a client device and an access point, wherein a client device is a wireless network station that is portable, mobile or portable and mobile, the method comprising:

transmitting upstream data from the client device using an 802.11b protocol (figure 1, figure 3 elements 346, 342, col. col. 1 lines 7 – 18, col. 2 lines 38 – 40, col. 13 lines 12 – 16);

receiving the upstream data at the access point (col. 1 lines 8 – 19, col. 2 lines 38 – 40, col. 13 lines 12 – 16; where in a network nodes communicate among nodes and Keaney's nodes can be client devices and/or access points, and therefore one node being a client device and the other being a access pint and the two communicating with each other using the particulars disclosed in figure 3);

transmitting downstream data from the access point using an 802.11g protocol (figure 1, figure 3 elements 345, 341, col. col. 1 lines 7 – 18, col. 2 lines 38 – 40, col. 13 lines 12 – 16); and

receiving the downstream data at the client device (col. 1 lines 8 – 19, col. 2 lines 38 – 40, col. 13 lines 12 – 16; where in a network nodes communicate among nodes and Keaney's nodes can be client devices and/or access points, and therefore one node being a client device and the other being a access pint and the two communicating with each other using the particulars disclosed in figure 3).

11. Claim 13 is rejected under 35 U.S.C. 102(e) as being anticipated by Rios (US 2004/0125775).

12. Regarding claim 13, Rios discloses a method of wireless communication between a client device and an access point, wherein a client device is a wireless network station that is portable, mobile or portable and mobile, the method comprising:

transmitting upstream data from the client device using an 802.11b protocol (abstract, paragraphs 11 – 13, 26 – 28, 73, 74, figure 1 elements 109, 111, 112, 115);

receiving the upstream data at the client device (abstract, paragraphs 11 – 13, 26 – 28, 73, 74, figure 1 elements 109, 111, 112, 115);

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transmitting downstream data from the access point using an 802.11g protocol (abstract, paragraphs 11 – 13, 26 – 28, 73, 74, figure 1 elements 109, 111, 112, 115); and

receiving the downstream data at the client device (abstract, paragraphs 11 – 13, 26 – 28, 73, 74, figure 1 elements 109, 111, 112, 115).

13. Claim 13 is rejected under 35 U.S.C. 102(e) as being anticipated by Lin (US 6725015).

14. Regarding claim 13, Lin discloses a method of wireless communication between a client device and an access point, wherein a client device is a wireless network station that is portable, mobile or portable and mobile, the method comprising:

transmitting upstream data from the client device using an 802.11b protocol (figures 1, 4, col. 1 lines 11 – 43, col. 2 lines 21 – 24, 31 – 35, 63 – 67, col. 3 lines 5 – 9; where access device is being interpreted as access point and where the device under client mode is being interpreted as a client device);

receiving the upstream data at the client device (figures 1, 4, col. 1 lines 11 – 43, col. 2 lines 21 – 24, 31 – 35, 63 – 67, col. 3 lines 5 – 9);

transmitting downstream data from the access point using an 802.11g protocol (figures 1, 4, col. 1 lines 11 – 43, col. 2 lines 21 – 24, 31 – 35, 63 – 67, col. 3 lines 5 – 9); and

receiving the downstream data at the client device (figures 1, 4, col. 1 lines 11 – 43, col. 2 lines 21 – 24, 31 – 35, 63 – 67, col. 3 lines 5 – 9).

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15. Claims 14 – 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Scheibel et al. (US 6212240).

16. Regarding claim 14, Scheibel discloses a method of wireless communication between a first station and a second station, the method comprising:

at the first station, transmitting data packets to the second station using a first data modulation and a first data rate (abstract, figures 1 – 3, col. 2 lines 19 – 44, col. 3 lines 42 – 47, col. 4 lines 23 – 49);

at the first station, transmitting acknowledgement packets to the second station in response to data packets received from the second station, using a first acknowledgement modulation and a first acknowledgement rate (abstract, figures 1 – 3, col. 2 lines 19 – 44, col. 3 lines 42 – 47, col. 4 lines 23 – 49);

at the second station, transmitting data packets to the first station using a second data modulation and a second data rate (abstract, figures 1 – 3, col. 2 lines 19 – 44, col. 3 lines 42 – 47, col. 4 lines 23 – 49); and

at the second station, transmitting acknowledgement packets to the first station in response to the data packets received from the first station, using a second acknowledgement modulation and a second acknowledgement rate (abstract, figures 1 – 3, col. 2 lines 19 – 44, col. 3 lines 42 – 47, col. 4 lines 23 – 49),

wherein the first data rate is distinct from at least one of the second data rate, the first acknowledgement rate, or the second acknowledgement rate (abstract, figures 1 – 3, col. 2 lines 19 – 44, col. 3 lines 42 – 47, col. 4 lines 23 – 49; where elements 101 and 107 of figure 1 have the same functionality and thus one device being at a certain and

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the other at a lower rate is being interpreted as wherein the first data rate is distinct from at least one of the second data rate).

17. Regarding claim 15, Scheibel further discloses wherein the first data modulation is distinct from at least one of the second data modulation, the first acknowledgement modulation, or the second acknowledgement modulation (abstract, figures 1 – 3, col. 3 lines 42 – 47).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 1 – 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keaney et al. (US 7062703) in view of Rois (2004/0125775).

19. Regarding claim 1, Keaney discloses a client wireless module, for handling communications to and from an access point wireless module, comprising:

an 11b processing section, for processing at least data to be transmitted to the access point into representations of a transmit signal (figure 1, figure 3 element 346, col. 1 lines 7 – 18, col. 2 lines 38 – 40, col. 13 lines 12 – 16);

an OFDM processing section, for processing at least a representation of a receive signal from the access point into receive data (figure 1, figure 3 element 341, col. 1 lines 7 – 18, col. 2 lines 38 – 40, col. 13 lines 12 – 16);

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at least one transmit antenna, coupled to the 11b processing section (figure 3, figure 1, 102 – 104, col. 3 lines 51 – 55, col. 4 lines 26 – 28); and

at least one receive antenna, coupled to the OFDM processing section (figure 3, figure 1, 102 – 104, col. 3 lines 51 – 55, col. 4 lines 26 – 28).

Also, Keaney discloses the client wireless module (col. 13 lines 12 – 16; where an access point and a client device can be used interchangeably). Keaney does not explicitly disclose logic for routing information between a client and the client wireless module, however, Keaney discloses status information (col. 6 lines 20 – 31) where status information is known to be used for routing information/decision processes.

In the same field of endeavor, however, Rois discloses logic for routing information between a client and the client wireless module (figure 2, paragraphs 32 – 40, 23). Rois also discloses an 11b processing section, for processing at least data to be transmitted to the access point into representations of a transmit signal; an OFDM processing section, for processing at least a representation of a receive signal from the access point into receive data; at least one transmit antenna, coupled to the 11b processing section; at least one receive antenna, coupled to the OFDM processing section (figure 1 elements 109, 111, 112, 115, paragraphs 11 – 13, 26 – 28).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use logic for routing information between a client and the client wireless module as taught by Rois in the system of Keaney to readily reduce data flow (paragraph 35).

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20. Regarding claim 2, Keaney further discloses at least one transmit antenna comprises a plurality of transmit antennas (figure 3, figure 1, 102 – 104, col. 3 lines 51 – 55, col. 4 lines 26 – 28). Also, Rois further discloses at least one transmit antenna comprises a plurality of transmit antennas (figure 1 element 111a-b, 112a-b, 115a-b).

21. Regarding claim 3, Keaney further discloses at least one receive antenna comprises a plurality of receive antennas (figure 3, figure 1, 102 – 104, col. 3 lines 51 – 55, col. 4 lines 26 – 28). Also, Rois further discloses at least one receive antenna comprises a plurality of receive antennas (figure 1 element 111a-b, 112a-b, 115a-b).

22. Regarding claim 4, Keaney discloses a client wireless module, for handling communications to and from an access point wireless module, comprising:

an OFDM processing section, for processing at least data to be transmitted to the access point into representations of a transmit signal (figure 1, figure 3 element 345, col. 1 lines 7 – 18, col. 2 lines 38 – 40, col. 13 lines 12 – 16);

an 11b processing section, for processing at least a representation of a receive signal from the access point into receive data (figure 1, figure 3 element 342, col. 1 lines 7 – 18, col. 2 lines 38 – 40, col. 13 lines 12 – 16);

at least one transmit antenna, coupled to the OFDM processing section (figure 3, figure 1, 102 – 104, col. 3 lines 51 – 55, col. 4 lines 26 – 28); and

at least one receive antenna, coupled to the 11b processing section (figure 3, figure 1, 102 – 104, col. 3 lines 51 – 55, col. 4 lines 26 – 28).

Also, Keaney discloses the client wireless module (col. 13 lines 12 – 16; where an access point and a client device can be used interchangeably). Keaney does not

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explicitly disclose logic for routing information between a client and the client wireless module, however, Keaney discloses status information (col. 6 lines 20 – 31) where status information is known to be used for routing information/decision processes.

In the same field of endeavor, however, Rois discloses logic for routing information between a client and the client wireless module (figure 2, paragraphs 32 – 40, 23). Rois also discloses an 11b processing section, for processing at least data to be transmitted to the access point into representations of a transmit signal; an OFDM processing section, for processing at least a representation of a receive signal from the access point into receive data; at least one transmit antenna, coupled to the 11b processing section; at least one receive antenna, coupled to the OFDM processing section (figure 1 elements 109, 111, 112, 115, paragraphs 11 – 13, 26 – 28).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use logic for routing information between a client and the client wireless module as taught by Rois in the system of Keaney to readily reduce data flow (paragraph 35).

23. Regarding claim 5, Keaney further discloses at least one transmit antenna comprises a plurality of transmit antennas (figure 3, figure 1, 102 – 104, col. 3 lines 51 – 55, col. 4 lines 26 – 28). Also, Rois further discloses at least one transmit antenna comprises a plurality of transmit antennas (figure 1 element 111a-b, 112a-b, 115a-b).

24. Regarding claim 6, Keaney further discloses at least one receive antenna comprises a plurality of receive antennas (figure 3, figure 1, 102 – 104, col. 3 lines 51 –

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55, col. 4 lines 26 – 28). Also, Rois further discloses at least one receive antenna comprises a plurality of receive antennas (figure 1 element 111a-b, 112a-b, 115a-b).

25. Regarding claim 7, Keaney discloses an access point wireless module, for handling communications to and from a client wireless module, comprising:

- an 802.11b processing section, for processing at least data to be transmitted to the client into representations of a transmit signal (figure 1, figure 3 element 346, col. 1 lines 7 – 18, col. 2 lines 38 – 40, col. 13 lines 12 – 16);

- an 802.11g processing section, for processing at least a representation of a receive signal from the client into receive data (figure 1, figure 3 element 341, col. 1 lines 7 – 18, col. 2 lines 38 – 40, col. 13 lines 12 – 16);

- at least one transmit antenna, coupled to the 802.11b processing section (figure 3, figure 1, 102 – 104, col. 3 lines 51 – 55, col. 4 lines 26 – 28); and

- at least one receive antenna, coupled to the 802.11g processing section (figure 3, figure 1, 102 – 104, col. 3 lines 51 – 55, col. 4 lines 26 – 28).

Also, Keaney discloses the access point wireless module (col. 13 lines 12 – 16). Keaney does not explicitly disclose logic for routing information between an access point and the access point wireless module, however, Keaney discloses status information (col. 6 lines 20 – 31) where status information is known to be used for routing information/decision processes.

In the same field of endeavor, however, Rois logic for routing information between an access point and the access point wireless module (figure 2, paragraphs 32 – 40, 23). Rois also discloses an 802.11b processing section, for processing at least

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data to be transmitted to the client into representations of a transmit signal; an 802.11g processing section, for processing at least a representation of a receive signal from the client into receive data; at least one transmit antenna, coupled to the 802.11b processing section; at least one receive antenna, coupled to the 802.11g processing section (figure 1 elements 109, 111, 112, 115, paragraphs 11 – 13, 26 – 28).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use logic for routing information between an access point and the access point wireless module as taught by Rois in the system of Keaney to readily reduce data flow (paragraph 35).

26. Regarding claim 8, Keaney further discloses at least one transmit antenna comprises a plurality of transmit antennas (figure 3, figure 1, 102 – 104, col. 3 lines 51 – 55, col. 4 lines 26 – 28). Also, Rois further discloses at least one transmit antenna comprises a plurality of transmit antennas (figure 1 element 111a-b, 112a-b, 115a-b).

27. Regarding claim 9, Keaney further discloses at least one receive antenna comprises a plurality of receive antennas (figure 3, figure 1, 102 – 104, col. 3 lines 51 – 55, col. 4 lines 26 – 28). Also, Rois further discloses at least one receive antenna comprises a plurality of receive antennas (figure 1 element 111a-b, 112a-b, 115a-b).

28. Regarding claim 10, Keaney discloses an access point wireless module, for handling communications to and from a client wireless module, comprising:

an 802.11g processing section, for processing at least data to be transmitted to the client into representations of a transmit signal (figure 1, figure 3 element 345, col. 1 lines 7 – 18, col. 2 lines 38 – 40, col. 13 lines 12 – 16);

an 802.11b processing section, for processing at least a representation of a receive signal from the client into receive data (figure 1, figure 3 element 342, col. 1 lines 7 – 18, col. 2 lines 38 – 40, col. 13 lines 12 – 16);

at least one transmit antenna, coupled to the 802.11g processing section (figure 3, figure 1, 102 – 104, col. 3 lines 51 – 55, col. 4 lines 26 – 28); and

at least one receive antenna, coupled to the 802.11b processing section (figure 3, figure 1, 102 – 104, col. 3 lines 51 – 55, col. 4 lines 26 – 28).

Also, Keaney discloses the access point wireless module (col. 13 lines 12 – 16). Keaney does not explicitly disclose logic for routing information between an access point and the access point wireless module, however, Keaney discloses status information (col. 6 lines 20 – 31) where status information is known to be used for routing information/decision processes.

In the same field of endeavor, however, Rois logic for routing information between an access point and the access point wireless module (figure 2, paragraphs 32 – 40, 23). Rois also discloses an 802.11b processing section, for processing at least data to be transmitted to the client into representations of a transmit signal; an 802.11g processing section, for processing at least a representation of a receive signal from the client into receive data; at least one transmit antenna, coupled to the 802.11b processing section; at least one receive antenna, coupled to the 802.11g processing section (figure 1 elements 109, 111, 112, 115, paragraphs 11 – 13, 26 – 28).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use logic for routing information between an access point and

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the access point wireless module as taught by Rois in the system of Keaney to readily reduce data flow (paragraph 35).

29. Regarding claim 11, Keaney further discloses at least one transmit antenna comprises a plurality of transmit antennas (figure 3, figure 1, 102 – 104, col. 3 lines 51 – 55, col. 4 lines 26 – 28). Also, Rois further discloses at least one transmit antenna comprises a plurality of transmit antennas (figure 1 element 111a-b, 112a-b, 115a-b). Regarding claim 12, Keaney further discloses at least one receive antenna comprises a plurality of receive antennas (figure 3, figure 1, 102 – 104, col. 3 lines 51 – 55, col. 4 lines 26 – 28). Also, Rois further discloses at least one receive antenna comprises a plurality of receive antennas (figure 1 element 111a-b, 112a-b, 115a-b).

30. Claims 16 – 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scheibel et al. (US 6212240) in view of Keaney et al. (US 7062703).

31. Regarding claim 16, Scheibel discloses the first data modulation, the second data modulation, the first acknowledgement modulation, and the second acknowledgement modulation are selected from and different QAM rates and a QPSK rate (col. 3 lines 42 – 47). However, Scheibel does not disclose 802.11b and OFDM.

In the same field of endeavor, however, Keaney discloses the use of 802.11b and OFDM (figures 1, 3, col. 1 lines 12 – 17, col. 3 lines 35 – 43, col. 6 lines 6 – 14, col. 7 lines 66 – col. 8 line 11).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use 802.11b and OFDM as taught by Keaney in the system of Scheibel to allow for a more diverse system. Also, OFDM is a robust technique for

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efficiently transmitting data over a channel. The technique uses a plurality of sub-carrier frequencies (sub-carriers) within a channel bandwidth to transmit data. These sub-carriers are arranged for optimal bandwidth efficiency compared to conventional frequency division multiplexing (FDM) which can waste portions of the channel bandwidth in order to separate and isolate the sub-carrier frequency spectra and thereby avoid intercarrier interference (ICI). OFDM allows resolution and recovery of the information that has been modulated onto each sub-carrier. Also, 802.11b provides high data transfer rate (which provides a higher bandwidth availability) and a frequency jumping technique.

32. Regarding claim 17, Scheibel discloses at least one of the first data modulation, the second data modulation, the first acknowledgement modulation, and the second acknowledgement modulation is an QAM and at least one of the modulations is an QPSK modulation (col. 3 lines 42 – 47). However, Scheibel does not disclose 802.11b and OFDM.

In the same field of endeavor, however, Keaney discloses the use of 802.11b and OFDM (figures 1, 3, col. 1 lines 12 – 17, col. 3 lines 35 – 43, col. 6 lines 6 – 14, col. 7 lines 66 – col. 8 line 11).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use 802.11b and OFDM as taught by Keaney in the system of Scheibel to allow for a more diverse system. Also, OFDM is a robust technique for efficiently transmitting data over a channel. The technique uses a plurality of sub-carrier frequencies (sub-carriers) within a channel bandwidth to transmit data. These sub-

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carriers are arranged for optimal bandwidth efficiency compared to conventional frequency division multiplexing (FDM) which can waste portions of the channel bandwidth in order to separate and isolate the sub-carrier frequency spectra and thereby avoid intercarrier interference (ICI). OFDM allows resolution and recovery of the information that has been modulated onto each sub-carrier. Also, 802.11b provides high data transfer rate (which provides a higher bandwidth availability) and a frequency jumping technique.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aslan Ettehadieh whose telephone number is (571) 272-8729. The examiner can normally be reached on Monday - Friday, 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Aslan Ettehadieh
Examiner
Art Unit 2637

AE

A handwritten signature in black ink, appearing to read 'Khai Tran', written in a cursive style.

KHAI TRAN
PRIMARY EXAMINER